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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR  | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|-----------------------|---------------------|------------------|
| 09/557,633      | 04/25/2000  | Leona Dryden Baumgart | ST9-97-054          | 9263             |

7590 01/08/2003

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EXAMINER

VU, TUAN A

ART UNIT

PAPER NUMBER

2124

DATE MAILED: 01/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.



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Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/557,633

Applicant(s)

BAUMGART ET AL.

Examiner

Tuan A Vu

Art Unit

2124

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 04/25/2000.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-33 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04/25/2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)                      4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)                      5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_                      6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. This action is responsive to the application filed April 25, 2000.

Claims 1-33 have been submitted for examination.

#### ***Drawings***

2. The drawings are objected to because the element 82 in Fig. 3 is being referred to in the specification as both "Object Module 82" and "program 82" (e.g. p.12, lines 17 and 21, respectively), hence making it unclear as how this element should be referred to in the disclosure. A proposed drawing correction or corrected references to the drawing are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

#### ***Specification***

3. The disclosure is objected to because of the following informalities: the element referred to as "program 82", e.g. p.12, line 21; p. 13, lines 8, 23, 25, 26, 28; p.14, lines 5, 7, 15, 18, does not have a corresponding element with the same label/appellation in Fig. 3.

The examiner will treat the element as if it were "Object Module" as described in Fig. 3.

Appropriate correction is required.

#### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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5. Claims 1, 3, 5-7, 12, 14, 16-18, 23, 25, and 27-29 are rejected under 35 U.S.C. 102(b) as being anticipated by Lee, USPN: 5,553,286 (hereinafter Lee).

**As per claim 1**, Lee discloses a method, system (col. 4, lines 48-59; Fig. 1) of producing an executable file including: receiving a plurality of programming language statements (e.g. col. 2, lines 3-7; Fig. 5, *TEXT2/TEXT* ); translating the source program (e.g. col. 1, lines 5-32; col. 4, lines 41-47; col. 5, line 58 to col. 6, line 6), including a symbol reference( *array of indexed data* – col. 6, lines 30-31); a symbol definition ( Fig. 4, *section, class name*); attribute information for the symbol reference ( *index numbers, size and offset fields* -- col. 6, line 51 to col. 7, line 1; *size, sequence, starting offset* – col. 8, lines 37-47), and attribute information for the symbol definition (*binding attribute* – col. 8, lines 37-46); resolving an external symbol reference ( col. 8, lines 6-33; Fig. 5).

**As per claim 3**, Lee discloses that the object module is further capable of including fixed attribute information (col. 7, lines 4-30, 47-49; *length, location* -- col. 9, lines 38-45).

**As per claim 5**, Lee discloses an address constant (*adcons* – col. 1, lines 48-60) for a symbol (Fig. 4, *section, class name*) and the attribute information declaring attribute information for the address constant (*class offsets, class identifier* -- col. 8, lines 48-52).

**As per claim 6**, Lee discloses additional address constants for additional references to the symbol reference in the object module (*one or more address constants* -- col. 1, lines 56-61; col. 7, lines 41-45) and different attribute information sets for the address constants(e.g. col. 8, lines 50-54; *target segment, offsets, virtual address* -- col. 9, lines 6-14, 28-35, 54-67; col. 7, lines 1-3).

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**As per claim 7**, Lee discloses that the resolving of the symbol reference and definition comprises a compatibility check (*Binder*) using the attribute information (*binding attribute, class identifier, offset* -- col. 8, lines 6-54; Fig. 5); and a separate compatibility checking for each reference to a symbol (col. 6, line 51 to col. 7, line 1) for which there is a separate address constant and separate attribute information for each address constant (*target segment, offsets, virtual address* -- col. 9, lines 6-14, 28-35, 54-67).

**As per claims 12, 14 and 16**, these claims recite a system comprising the same corresponding limitations set forth in claims 1, 2 and 5 above, respectively. Hence, the rejections of claims 1, 2, and 5 are herein applied.

**As per claims 17 and 18**, these are the system versions of the methods in respectively, claims 6 and 7 above; whose limitations have already been addressed above.

**As per claim 23, 25 and 27**, these claims recite an article of manufacturer comprising a computer usable media embedding a computer program capable of performing the same method steps in claims 1, 2, and 5 respectively, which limitations have been addressed in the rejection of claims 1, 2, and 5, respectively. Furthermore, Lee also teaches such computer product/article of manufacturer in col. 10, line 66 to col. 12, line 9.

**As per claims 28 and 29**, these are the computer product versions of the methods in respectively, claims 6 and 7 above; whose limitations have already been addressed above.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 2, 4, 8, 9; 13, 15, 19, 20; and 24, 26, 30, 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee, USPN: 5,553,286, as applied to claims 1, 12, and 23 above, and further in view of Fitzgerald, USPN: 5,408,665 (hereinafter Fitzgerald).

**As per claim 2**, Lee does not explicitly disclose that the language statement is capable of indirectly declaring extended attribute information defined in another location in the object module. However, Fitzgerald discloses, in a method to bind object modules translated from program source into executables analogous to that of Lee, the indirect definition of extended attribute information defined in another location of the object module (*EXTDEF* – Fig. 4c; *EXTERN* – Fig. 3a,b; *Module ID* – Fig. 5b, 6c; col. 12, lines 5-33). It would have been obvious for one of ordinary skill in the art at the time the invention was made to implement the derivation from source program and indirect definition of extended attribute information defined elsewhere in the object module as taught by Fitzgerald to the method of translating source program into object modules disclosed by Lee. The modification would have been obvious because this additional source of extended attribute information made ready into structures at binding time would facilitate the relocating of internal and external symbol references, thus improve the time and resource usage efficiency of the modules linking and binding process in Lee's disclosed system.

**As per claim 4**, this claim is rejected for the same reasons set forth in claim 2 above.

**As per claim 8**, Lee further discloses that the object module includes an External Symbol Directory (ESD) including a record capable of indicating a symbol in the program, a location of the symbol in the program (col. 6, lines 54-57; Fig. 5, *ESD 64*); but does not point out that such

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ESD includes a pointer to attribute information in the program for the symbol. However, Fitzgerald in a method to bind object modules translated from program source into executables analogous to that of Lee discloses the use of pointer in an external symbol table (*External Dictionary*) to refer to the attribute information in the program for the symbol (col. 15, lines 46-54; Fig. 5b – *PTR (Ext. Dict) → Bucket, ASCII String*). It would have been obvious for one of ordinary skill in the art at the time the invention was made to add the implementation of pointer to symbol attribute inside the ESD as taught by Fitzgerald into Lee's ESD because such additional pointing structure would facilitate the fetching of attribute needed to resolve symbol references during binding of modules components, and alleviate the data (e.g. whole attribute data) store usage in the ESD by just storing an address referring to that data.

**As per claim 9**, Lee discloses that the object module further includes an Relocation List Directory (RLD), a location of an address constant (col. 3, lines 16-18; col. 8, lines 48-54; Fig. 5 – *RLD 64*); but does not point out that such RLD includes a pointer to attribute information for the address constant in the program. However, Fitzgerald in a method to bind object modules translated from program source into executables analogous to that of Lee discloses the use of pointer in an symbol dictionary (*STD. DICT.*) to refer to the attribute information for the address of a referenced program module (col. 15, lines 46-54; Fig. 5b – *PTR (Std. Dict) → "Foo\_Module" | File offset | Module ID*). It would have been obvious for one of ordinary skill in the art at the time the invention was made to add the implementation of pointer to address constant inside a relocating table as taught by Fitzgerald into Lee's RLD because such additional pointing structure would facilitate the fetching of attribute needed to resolve symbol references



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during binding of modules components, and alleviate the data (e.g. whole attribute data) store usage in the ESD by just storing an address referring to that data.

**As per claims 13, 19, 20, and 24, 30, 31,** these claims are respectively the system and computer product versions of the method limitations set forth and addressed respectively, in claims 2, 8, and 9 above. Hence, the rejections of claims 2, 8 and 9, respectively, are herein applied.

**As per claims 15 and 26,** in reference to respectively, claims 12 and 23 above, these are respectively the system and computer product versions of the method in claim 4 above. Hence, the rejections of claim 4 are herein applied for both instant claims.

8. Claims 10-11, 21-22, and 32-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee, USPN: 5,553,286, as applied to respectively, claims 1, 12, and 23 above, and further in view of Looney, USPN: 6,366,876 (hereinafter Looney).

**As per claim 10,** Lee discloses that the resolving of the symbol reference and definition comprises a compatibility check (see claim 7 above); but does not explicitly disclose that such resolving further comprises a compatibility check using signature data for the symbol definition and symbol reference. However, Looney in a method of assessing compatibility between programming resources analogous to that of Lee discloses the use of signature data per symbol reference (*MethodRef* – col. 12, lines 1-5) and symbol definition in the compatibility check within the symbol reference/definition resolution process (*signature attribute for method* -- col. 10, lines 3-42). It would have been obvious for one of ordinary skill in the art at the time the invention was made to implement the signature data for symbol reference and definition just as taught by Looney into the method of compatibility check disclosed by Lee because this would

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further enforce the compliance of referenced data to be matched during the binding/linking process by virtue of the pre-determined signature data; thereby obviating extraneous usage of resources for recovery due to incompatibility errors.

**As per claim 11**, Lee does not expressly disclose the step of determining whether the compatibility check failed and the step of processing the attribute information declared for the symbol reference and definition that failed the compatibility check to determine a cause of the incompatibility. But Looney in an analogous method discloses the determining as to whether the symbol reference and definition compatibility check fail (Fig. 9a,b,c ); and the processing of the attribute information (e.g. *compliance status* – col. 10, lines 20-64) for such symbol reference and definition( *class, method, fields, return type*) to determine the cause of incompatibility(e.g. col. 2, lines 19-47; col. 2 line 59 to col. 3, line 6; col. 10, lines 20-64; col. 12, lines 54-58). It would have been obvious for one of ordinary skill in the art at the time the invention was made to add the compatibility failure checking for symbol reference and definition; and determining of cause thereof such as taught by Looney into the method of compatibility check disclosed by Lee. The modification would have been obvious because this would further establish a systematic recording of the compliance checking results on referenced data during the binding/linking process, thereby providing a base of information for the analysis and/or improvement of future incompatibility error checking processes.

**As per claims 21, 22 and 32, 33**, these are respectively the system and computer product versions of the methods in respectively, claims 10 and 11 above. Hence, the rejections of claims 10 and 11, respectively, are herein applied.

### ***Conclusion***

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9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Pat No. 5,878,262 to Shoumura et al., disclosing plurality of tables of file resources fields in linking.

U.S. Pat No. 6,083,276 to Davidson et al., disclosing parsing of XML attributes in component-based application.

U.S. Pat No. 5,625,822 to Brett, disclosing sorting of data specifics (version, libraries) to invocation calls.

U.S. Pat No. 6,185,733 to Breslau et al., disclosing library description file in load object module from NW.

U.S. Pat No. 5,303,379 to Khoyi et al., disclosing linking from multiple files resources and link tables.

U.S. Pat. No. 6,182,283 to Thomson, disclosing virtual function tables to resolve references at linking.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan A Vu whose telephone number is (703)305-7207. The examiner can normally be reached on 8AM-4:30PM/Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kakali Chaki can be reached on (703)305-9662.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

**or faxed to:**

(703) 746-7239, ( for formal communications intended for entry)

**or:** (703) 746-7240 ( for informal or draft communications, please label

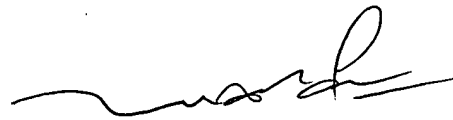
“PROPOSED” or “DRAFT”)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA. , 22202. 4<sup>th</sup> Floor( Receptionist).

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

VAT  
November 4, 2002



**TUAN Q. DAM**  
**PRIMARY EXAMINER**